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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,303	10/01/2002	Michael L. Evans	20.2799	5730
23718	7590	10/05/2004	EXAMINER	
SCHLUMBERGER OILFIELD SERVICES 200 GILLINGHAM LANE MD 200-9 SUGAR LAND, TX 77478			GAGLIARDI, ALBERT J	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,303

Applicant(s)

EVANS ET AL.

Examiner

Albert J. Gagliardi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 3-5, 10, 11, 13-19 and 22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6-9, 12, 20, 21 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/03, 10/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group 1, in the reply filed on 29 July 2004 is acknowledged.
2. Applicant's election without traverse of Species 2 (including claims 1-2, 6-9, 12, 20-21, and 23-24) in a telephone interview on 29 September 2004 is acknowledged. The examiner notes that per discussions with Victor Segura, the requirement for further restriction between Species 2 and 4 has been withdrawn.
3. Claims 10-11, 13-15, 18, and 22, and claims 3-5, 16-17 and 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions and a non-elected species respectively, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 27 July 2004 and the telephone interview of 29 September 2004.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the calibration substance disposed a channel in the neutron sensor (claims 7 and 23) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

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should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 7-9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Regarding claims 7-9, the claims include the limitation (either directly or through their dependency) of a limitation of channels “within” the sensor, but claim 1, recites that the calibrations substances are disposed proximate to the sensor. Such differences suggest an alternate arrangement, not a more limiting arrangement.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 3,860,816)

Regarding claim 1, *Wilson* discloses (Figs. 1-4) a method for calibrating a well-logging sensor comprising: emitting a first signal into a first calibration substance located proximate to the sensor (col. 5, lines 35-37); measuring a first sensor response (col. 5, lines 35-37); emitting a second signal into a first calibration substance located proximate to the sensor (col. 5, lines 42-45); measuring a second sensor response (col. 5, lines 42-45); and determining a sensor response function from the first and second sensor responses (col. 5, line 46).

Regarding claim 2, *Wilson* discloses that the response function is a linear function (see generally Fig. 1).

8. Claims 6-9, 12, 20-21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Wilson* as applied above, and further in view of Jorro (4,945,233).

Regarding claim 6, *Jorro* discloses a method for calibrating a neutron well-logging sensor comprising: emitting a first signal into a first calibration substance located proximate to the sensor (col. 3, lines 51-53); measuring a first sensor response (col. 3, lines 60-63); emitting a second signal into a first calibration substance located proximate to the sensor (col. 3, lines 51-53); measuring a second sensor response (col. 4, lines 2-5).

Although *Jorro* does not specifically identify the method as further including a step of determining a sensor response function from the first and second sensor responses, *Jorro* teaches that neutron-type logging systems, like most well logging systems, requires calibration according to a known standard (col. 1, lines 32-35). Therefore absent some degree of criticality, it would

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have been obvious to a person of ordinary skill in the art to modify the well logging system suggested by *Jorro* to utilize the sensor responses to determine a sensor response function, as is disclosed by *Wilson* and the admitted prior art (application at par. 11).

Regarding claim 7, *Jorro* discloses that the sensor (64) is surround (26) by water (or as an obvious variation, an aqueous solution that may also include propylene glycol to reduce the chance of freezing (col. 3, lines 12-21) and wherein the calibration substances are disposed in a channel (annular space located proximate to the sensor). The examiner notes that while *Jorro* does not identify the channels as being within the sensor, those skilled in the art appreciate that it is known in the art to include calibration devices as part of the sensor, and, absent some degree of criticality, it would have been a matter of routine design choice within the skill of a person of ordinary skill in the art to modify the system so as to include channels as part of the sensor depending on the needs of the particular application and the desired degree of convenience and flexibility.

Regarding claims 8 and 9, *Jorro* discloses that the calibration substances include air (i.e., the empty chamber (col. 3, lines 61-63) and a polymer rod (col. 3, line 31).

Regarding claim 12, *Jorro* (see explanation regarding claim 6 above) further suggests emitting a third signal and measuring a third sensor response (col. 4, lines 6-16).

Regarding claim 20, the method suggested by *Jorro* (see explanation regarding claims 6-9 above) suggests the method as recited according to claim 20 and is rejected accordingly.

Regarding claim 21, the assumption of a linear response function is routine in the art and would have been an obvious design choice, if not an inherent aspect, in view of the simplicity of such response functions.

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Regarding claim 24, the method suggested by *Jorro* (see explanation regarding claim 6 above) suggests the method as recited according to claim 24 and is rejected accordingly.

Allowable Subject Matter

9. Claim 23 is allowed (subject to correction of the above objection in regard to the drawing above).

10. The following is a statement of reasons for the indication of allowable subject matter: Regarding independent claim 23, the prior art does not disclose or fairly suggest a method of calibrating a neutron well-logging tool, as specifically claimed, including at least the limitations of emitting at least signals into three different substances disposed in a channel within the sensor, wherein the three substances are air, a polymer rod, and water.

Conclusion

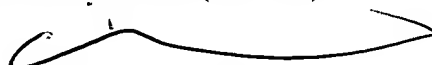
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi
Primary Examiner
Art Unit 2878

AJG